CLAIMS

1. An optical/ electrical conversion element comprising an optical/ electrical conversion layer formed by an assembly of

a light-absorbing dendrimer structure operating as an electron donor; and

fine metal particles operating as an electron receptor.

2. The optical/ electrical conversion element according to claim 1 wherein said dendrimer structure is bonded to said fine metal particles on a surface.

3. The optical/ electrical conversion element according to claim 2 wherein said dendrimer structure includes a disulfide group taking part in said binding on a surface.

4. The optical/ electrical conversion element according to claim 1 wherein said dendrimer structure includes molecules of groups of atoms exhibiting light absorption properties.

5. The optical/ electrical conversion element according to claim 4 wherein said molecules of groups of atoms exhibiting light absorption properties comprise a porphyrin structure or a phthalocyanine structure.

6. The optical/ electrical conversion element according to claim 1 wherein said fine metal particles are of a nano-order particle size.

7. The optical/ electrical conversion element according to claim 1 wherein said fine metal particles are of at least one metal selected from the group consisting of gold,

platinum, palladium and silver.

8. The optical/ electrical conversion element according to claim 1 wherein said optical/ electrical conversion layer and the electrolyte layer are layered between a pair of electrode layers.

9. A method for producing an optical/ electrical conversion element comprising an optical/ electrical conversion layer formed by an assembly of

a light-absorbing dendrimer structure operating as an electron donor; and fine metal particles operating as an electron receptor, comprising

forming the optical/ electrical conversion layer by collecting said dendrimer structure operating and said fine metal particles.

10. The method for producing an optical/ electrical conversion element according to claim 9 comprising

a step of depositing said fine metal particles on an electrode layer and a step of depositing said dendrimer structure are carried out sequentially at least once.

11. The method for producing an optical/ electrical conversion element according to claim 10 comprising

a step of depositing said fine metal particles and said dendrimer structure after introducing functional groups, that may be bonded to said fine metal particles, on the surface of said substrate.

12. The method for producing an optical/ electrical conversion element according to claim 9 wherein said dendrimer structure is bonded to said fine metal particles on

the surface of the optical/ electrical conversion element.

13. The method for producing an optical/ electrical conversion element according to claim 9 wherein said dendrimer structure of the optical/ electrical conversion element includes a disulfide group taking part in the bonding on the surface thereof.

14. The method for producing an optical/ electrical conversion element according to claim 9 wherein said dendrimer structure of the optical/ electrical conversion element includes light-absorbing molecules or groups of atoms on the surface thereof.

15. The method for producing an optical/ electrical conversion element according to claim 14 wherein said light-absorbing molecules or groups of atoms of the optical/ electrical conversion element include a porphyrin structure or a phthalocyanine structure.

16. The method for producing an optical/ electrical conversion element according to claim 9 wherein the fine metal particles of the optical/ electrical conversion element has a nano particle size.

17. The method for producing an optical/ electrical conversion element according to claim 9 wherein the fine metal particles of the optical/ electrical conversion element are fine metal particles of at least one metal selected from a group consisting of gold, platinum and palladium.

18. The method for producing an optical/ electrical conversion element according to claim 9 wherein the optical/ electrical conversion element is composed of a pair of

electrode layers and a layered set of the optical/ electrical conversion layer and the electrolyte layer arranged therebetween.

19. An optical sensor employing, as a charge separating layer, an optical/ electrical conversion element composed of a set of a light absorbing dendrimer structure operating as an electron donor and fine metal particles operating as an electron receptor.

20. The optical sensor according to claim 19 wherein said dendrimer structure of the optical/ electrical conversion element is bonded to said fine metal particles on the surface thereof.

21. The optical sensor according to claim 19 wherein said dendrimer structure of the optical/ electrical conversion element has a disulfide group taking part in said bonding on the surface thereof.

22. The optical sensor according to claim 19 wherein said dendrimer structure of the optical/ electrical conversion element has molecules or a group of atoms exhibiting light absorbing properties.

23. The optical sensor according to claim 22 wherein said molecules or a group of atoms exhibiting light absorbing properties of the optical/ electrical conversion element are of a porphyrin structure or a phthalocyanine structure.

24. The optical sensor according to claim 19 wherein said fine metal particles of the optical/ electrical conversion element are of a nano particle size.

25. The optical sensor according to claim 19 wherein said fine metal particles of the

optical/ electrical conversion element are fine particles of at least one metal selected from the group consisting of gold, platinum and palladium.

26. The optical sensor according to claim 9 wherein said dendrimer structure of the optical/ electrical conversion element includes a disulfide group taking part in the bonding on the surface thereof.

27. ~~26~~. The optical sensor according to claim 19 wherein said optical/ electrical conversion element and the electrolyte layer are layered between a pair of electrode layers.

28 ~~27~~. A solar battery comprising an optical/ electrical conversion element including an optical/ electrical conversion layer formed by an assembly of a light-absorbing dendrimer structure operating as an electron donor and fine metal particles operating as an electron receptor,

29 ~~28~~. The solar battery according to claim 27 wherein said dendrimer structure of the optical/ electrical conversion element is bound to said fine metal particles on a surface.

30 ~~29~~. The solar battery according to claim 27 wherein said dendrimer structure of the optical/ electrical conversion element includes a disulfide group taking part in said bonding on the surface thereof.

31. ~~30~~. The solar battery according to claim 27 wherein said dendrimer structure of the optical/ electrical conversion element includes molecules of groups of atoms exhibiting light absorption properties.

32 ~~31~~. The solar battery according to claim 27 wherein said molecules of groups of atoms exhibiting light absorption properties in the optical/ electrical conversion element comprise a porphyrin structure or a phthalocyanine structure.

33 ~~32~~. The solar battery according to claim 27 wherein said fine metal particles of the optical/ electrical conversion element are of a nano-order particle size.

34 ~~33~~. The solar battery according to claim 27 wherein said fine metal particles of the optical/ electrical conversion element are of at least one metal selected from the group consisting of gold, platinum, palladium and silver.

35 ~~34~~. The solar battery according to claim 27 wherein said optical/ electrical conversion layer and the electrolyte layer of the optical/ electrical conversion element are layered between a pair of electrode layers.